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A Comparison of Vocational Preferences of Delinquent and Nondelinquent Boys

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A COMPARISON OF VOCATIONAL PREFERENCES OF DELINQUENT AND NONDELINQUENT BOYS

by

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LIFE

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CHAPTER I

PURPOSE

Juvenile delinquency may be thought of as a social concept. It is also a matter of increasingly serious social concern. Much of the sociopathic behavior manifested by the delinquent is a symbol of protest against the environment and community in which he resides. The activities of the delinquent can be interpreted and understood when we possess information not only regarding the etiology of delinquent patterns but also its objectives and results. Thus, numerous research possibilities are available to those interested in delinquency.

Two large areas are accessible for delinquent studies. First, and of major importance, are investigations which attempt to discover how the delinquent's behavior affects his whole environment. The second area of research is more directly concerned with the delinquent per se. Here attempts are made to determine in what manner and to what extent the individual manifesting delinquent behavior is affected. It will be an aspect of this latter problem toward which this investigation will be directed. More precisely, the purpose of this thesis will be to discover whether a delinquent group of boys differs significant-

ly from a group of nondelinquent boys in the selection of vocational preferences when several variables are controlled. The Kuder Preference Record will be used and mean profiles for each group will be produced. Attempt will be made to discover any vocational area or combination of areas on the KPR, which is more common to one group than to the other group. The strength or intensity of the patterns of vocational interests will also be compared, for personal or social maladjustment, frequently found in delinquents, is said to result in a depressed or a weaker vocational pattern.

There are several reasons why the results of this study are desired. It is generally accepted that all interests are mainsprings of the individual's behavior and reactions to his environmental needs. The levels of aspiration, motivation and personality may all be related to interests and a systematic pattern of research may evoke a clearer understanding of these factors. This study may contribute further to a better understanding of the delinquent because Strong[1] concludes that measures of an individual's interests may easily prove the best approach to an understanding of him. In addition, after extensive research in the areas of vocational interests, Darley[2] suggests

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1 E. K. Strong, "Aptitudes versus Attitudes in Vocational Guidance," Journal of Applied Psychology, XVIII, 1934, 515.

2 J. G. Darley, Clinical Aspects and Interpretations of the Strong Vocational Interest Blank, New York, 1041, 72.

that other investigators seek out various groups and conduct further vocational interest research projects. He states that every counselor recognizes the need for knowing more about the characteristic vocational pattern of the individual or the group of individuals with whom he deals. It is believed that the delinquents to be used in this study would compose such a group.

CHAPTER II

REVIEW OF THE LITERATURE

In reviewing the literature relevant to this study it was discovered that many apriori conclusions have been recorded regarding the vocational and avocational interests of delinquent and nondelinquent boys. In addition to these hypothetical statements some comparative studies have been conducted. Much variation exists in the results obtained from these investigations.

In this study it must first be discovered just what factors in the individual and in his background are related to the development of vocational interests and the selection of an occupation. Secondly, an attempt must be made to discover whether or not these factors differ in the delinquent and nondelinquent boy.

Carter's[3] hypothesis regarding the development of vocational preference and attitudes is in agreement with most authors. Home environment, personalities of close friends, compan-

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3 H. D. Carter, "The Development of Vocational Attitudes," Journal of Consulting Psychology, IV, 1940, 185-191.

ions and parents, plus the cultural resources available to the individual are all mentioned as important external factors in determining a person's vocational preference. Other influences, partially beyond the individual's control, are his personal needs, physical traits, mental ability and other native endowments. It is also noted that the individual receives great satisfaction from the identification with some person or group of individuals that he respects. In this way he obtains status. Through this identification his interests, activities and experiences become restricted. To the extent that this is true, the person's interests grow and he learns about the vocation and the vocational groups.

The development of vocational interests also involves close interaction between growth processes. Some of these processes are biologically controlled and others educationally controlled. The development of desirable vocational interests and eventual vocational adjustment demands the assimilation of realistic value systems found in his culture. This assimilation, Carter states, "implies learning, maturation, development of character and personality. All the factors relevant to learning, maturation, and development in general have a bearing upon the development of vocational attitudes."[4] In a last analysis, personal characteristics, environmental associations, guidance and

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4 ibid. (i.e., 187)

exceptional talents realized are responsible for the development of vocational preferences and the determination of them. A closer examination and appraisal of the various factors that are active determinants in the evolution of vocational interests may reveal whether or not some basis exists for possible variation in delinquent and nondelinquent preferences.

First, the various external contacts of both groups will be examined, namely, home environment and participation in educational and recreational activities. Secondly, the more internal aspects, such as intelligence, physical status, abilities, level of aspiration and personal adjustment will be compared.

Darley[5] contends that students coming from homes where family maladjustments exist reflect occupational interest scores that are depressed and unpatterned. Broken homes, parental neglect and lack of proper discipline, all of which contribute to vocational patterns are found to exist more frequently in the history of the delinquent. In this regard, Shideler[6] found that forty to 70 per cent of the various groups of delinquents that he studied came from broken homes, whereas, only 25 per cent of all children came from similar environments. In a study of four

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5 Darley, Clinical Aspects of the Strong, 8.

6 E. Shideler, "Family Disintegration and the Boy Delinquent," Journal of Criminal Law, 1918, 709-732.

groups of boys from correctional institutions in New York, Slawson[7] found that 45 per cent of the delinquents came from broken homes as compared to 19 per cent for a control group composed of students from three public schools in the area. Healy and Bronner[8] and the Gluecks[9] both reported similar findings.

Home discipline, also an element of the home environment which affects vocational interest, is much poorer in delinquent groups. Seventy per cent of the 500 delinquents studied by the Gluecks[10] came from homes where excessive amounts or total lack of disciplinary enforcement was found. Burt[11] reports similar findings. Seventy-nine per cent of the English homes which fostered delinquent children displayed defective family disciplinary patterns. This was seven times more frequent than was found in a similar number of nondelinquent family groups.

It has also been proved that friends of the family can have some effect upon the selection of a youth's vocational pre-

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7 J. Slawson, The Delinquent Boy, Boston, 1926.

8 W. Healy and A. Bronner, New Light on Delinquency, New Haven, 1936, 49.

9 S. Glueck and E. Glueck, One Thousand Juvenile Delinquents, Cambridge, 1934, 57.

10 S. Glueck and E. Glueck, 500 Criminal Careers, Cambridge, 1930, 119.

11 C. Burt, The Young Delinquent, New York, 1933, 37.

ferences.[12] The family friends and acquaintances supply the offspring with information and attitudes regarding occupations as well as influencing other aspects of their social life. Berdie[13] tells us that acquaintances who possess value for the individual such as, "hero worship" or other admirable personality manifestations may influence, and be related to, the individual's vocational preference. Undesirable family acquaintances are found more frequently in the environment of the delinquent.

It could be concluded that marked differences exist between the home environments of the delinquent and nondelinquent boy. To evaluate the above statements, however, it would be necessary to discover whether defective family relationships were not equally prevalent in the backgrounds of the nondelinquent children from the same areas, when other variables were controlled.

Outside the home environment, in the realm of education, the intense dislike for formal educational activities and the persons identified with these functions is displayed by delinquent youth much more than by nondelinquent students. Ecken-

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12 H. D. Carter, Vocational Interests and Job Orientation - A Ten Year Review, Stanford University Press, 1944, 52.

13 R. F. Berdie, "Factors Associated with Vocational Interests," Journal of Educational Psychology, XXXIV, 1943, 269-270.

rode's[14] study of 345 delinquents admitted to the National Training School for Boys in Washington, D.C., indicated that 90 per cent of them expressed definite dislike for the school and its personnel. This may be important when we consider that a relationship can be demonstrated between measured and expressed vocational interests and liking for teachers. This is reflected in Berdie's[15] study of forty-two students with measured interests in engineering. It was related that 29 per cent indicated their favorite teacher taught mathematics. The finding of Brooks, however, is most impressive. He presents the following:

> Eight girls said they expected to teach physical education. Knowing that their instructor in physical education was an excellent teacher, very popular, attractive and of a pleasing personality, the writer sought to find out when these eight girls had decided to become teachers of physical education. Six of them had made a decision as a result of being in the physical education class.[16]

Franklin[17] and Brooks[18] further emphasize that partici-

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14 C. J. Eckenrode, "Their Achievement is Delinquency," Journal of Educational Research, XLIII, 1950, 554-560.

15 Berdie, "Factors Associated with Vocational Interests," Journal of Educational Psychology, XXXIV, 259-261.

16 F. D. Brooks, Psychology of Adolescence, Boston, 1929, 300.

17 E. E. Franklin, The Permanence of the Vocational Interests of Junior High School Pupils, Baltimore, 1924, 63.

18 Brooks, Psychology of Adolescence, 305.

pation in properly conducted school programs, recreational activities and hobbies is conducive to the initiation of vocational interests. Fowler[19] agrees that a definite relationship exists between vocational interests and leisure time activities as does Super,[20] who observed that people who have vocations that are outlets for their major interests were likely to have had hobbies which resembled these vocations. Dooley[21] states that participation in wholesome school and club activities is woefully lacking in delinquent groups. Reinhardt and Harper[22] actually compared the club activities of forty delinquent and forty nondelinquent boys of equal age. It was found that thirty-five of the nondelinquents participated in all types of constructive clubs and organizations. Only fifteen of the forty delinquents enjoyed similar functions and the other twenty-five were unsupervised and found recourse in unwholesome gang activities.

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19 F. Fowler, "Interest Measurement-Questions and Answers," School Life, XXVIII, 1945, 26.

20 D. E. Super, The Dynamics of Vocational Adjustment, New York, 1942, 88.

21 W. H. Dooley, "Juvenile Delinquency and Vocational Education," Industrial Arts and Vocational Education, XXIX, 1940.

22 J. M. Reinhardt and F. V. Harper, "Comparison of Environmental Factors of Delinquent and Nondelinquent Boys," Journal of Juvenile Research, XV, 1935, 271-277.

Similar findings were made by Kindred[23] in his study conducted at the Colorado Industrial School for Boys. Only twenty-six out of 121 delinquents investigated had cultivated special hobbies or abilities, such as dramatics, music, art, or cooking. Eighty-nine of the 121 boys did not belong to any type of club or organization. Kindred concludes that the number of delinquent boys participating in this type of activity is significantly smaller than that of average nondelinquents. He explains that maladjustment at home and at school, adoption of undesirable habits and bad companions, deter delinquent boys from participating in purposeful organizations and constructive activities that could produce interest in some vocation that they eventually would aspire to pursue. The Gluecks' findings are also most impressive. Ninety-three per cent of 976 cases employed by the Gluecks'[24] in their classical work with 1,000 juvenile delinquents showed that they indulged in harmful work or undesirable recreational activities. "The counterpoise of legitimate and healthful recreational outlets was too often missing; for most of these boys were never absorbed into organizational programs for the use of leisure." Seventy-five per cent of them had

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23 R. M. Kindred, "The Public Schools, and Juvenile Delinquency," Industrial Arts and Vocational Education, XXIX, 1940, 134-20a.

24 S. Glueck and E. Glueck, Juvenile Delincuents Grown Up, New York, 1940, 12.

never belonged to any organization or club such as the Boy Scouts, YMCA or settlement house groups where wholesome avocational and vocational interests are usually cultivated. Only 3 per cent of these delinquent youths participated in constructive expenditure of their energies such as the development of personal talents or by attendance at various extra-school or night classes. In comparison, Berdie discovered that 55 per cent of his students reflecting engineering interests on the Strong Interest Blank had related hobbies and actively pursued them. Forty-six per cent of seventy-one students interested in skilled trades had related hobbies and ninety students that recorded business interests had 32 per cent interested in similar activities. He summarizes aptly that "these results suggest a substantial relationship between both expressed and measured vocational interests and the activities and hobbies of a student. Whether the interest and activities co-determine each other or whether they are paralleled expressions of a unified personality exposed to a given set of conditions is unknown."[25]

Regarding the more innate or personal characteristics of both groups, intelligence is said to influence vocational selection. Most early studies stressed the significance of mental deficiency in the delinquent group. This is especially im-

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25 Berdie, "Factors Associated with Vocational Interests," Journal of Educational Psychology, XXXIV, 269.

portant because it is generally held that the mentally slow are retarded and less marked in the development of vocational interests. Pintner lists 41 individual investigations and those studies list feeblemindedness as being present in from 7 per cent to 93 per cent of the delinquents considered. Pintner sums up by saying that "the distribution of delinquents is heavily weighted at the lower end.... there seems to be general agreement as to the fact that the average delinquent is mentally below the average nondelinquent on the usual abstract intelligence test".[26] More recently, Gates[27] holds that the typical delinquent has an IQ of between eighty and ninety and is retarded in school. However, Richmond[28] informs us that when we consider the delinquent as an individual, it is necessary to revise the commonly asserted belief that delinquents are people of low mentality who possess abnormalities that make it impossible for them to conform to social standards. She concludes that the majority of delinquents are as normal as the average personality.

Bronner,[29] too, cautions us that it is well to remember one cannot compare a nondelinquent group with a delinquent group

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26 R. Pintner, Intelligence Testing, New York, 1931.

27 A. I. Gates, Educational Psychology, 3rd ed., New York, 1948, 725.

28 W. F. Richmond, The Adolescent Boy, New York, 1933, 120.

29 A. Bronner, A Comparative Study of the Intelligence of Delinquent Girls, New York, 1914, 2.

who are so much more clever that they can commit offenses considered delinquent without being detected. In all studies of delinquent and nondelinquent groups it is only the apprehended ward that is discussed. It is the less intelligent individual who is so much more readily, and so much more often, detected and brought into court. These are the delinquents who predominate in institutions where the investigations are conducted. Civil authorities also prefer to place the brighter or more intelligent delinquents on parole rather than intern them for a first offense.

However, the most impressive conclusion is reported by Strong after surveying a number of studies that compared the results of intelligence tests with measures of vocational interest. The correlations for each occupational key of the Strong Vocational Interest Blank with IQ, ranged from a -.36 to .38. "Occupational interest scores," he states, "correlate in the neighborhood of 0 with intelligence".[30]

Regarding physical characteristics, said to affect vocational selection, several writers have stressed the alledged malnutrition and physical underdevelopment of delinquents and criminals. Burt[31] noted a great prevalence of sickness and debility among juvenile delinquents in London. Physical defects

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30 E. K. Strong, Vocational Interests of Men and Women, Stanford University Press, 1945, 332.

31 Burt, The Young Delinquent, 138.

seem to be more common among delinquents than among nondelinquents on account of ignorance, lack of proper care and training and other unfavorable conditions which supposedly characterize the homes from which they come. Faber and Ritter[32] discovered, however, that delinquents and nondelinquents of the same socio-economic status differ very little in the prevalence of physical ailments and defects. Anthropometric measurements of juvenile delinquents by Mathews,[33] McCord,[34] Healy and Bronner[35] and similar statistical research on criminals by Goring,[36] do not provide any basis for the application of the theory of underdevelopment, malnutrition and organic deficiency to delinquents. Brooks[37] concludes that delinquents and nondelinquents can not adequately be differentiated by intellectual or physical characteristics.

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32 H. K. Faber and A. J. Ritter, "A Mental and Physical Survey of a Group of Juvenile Delinquents," American Journal of Diseases in Children, XIV, 1917, 444-462.

33 J. Mathews, "A Survey of 341 Delinquent Girls of California," Journal of Delinquency, VIII, 1923, 196-231.

34 C. P. McCord, "Physical and Mental Condition of Delinquent Boys," Journal of Delinquency, IV, 1919, 165-185.

35 Healy and Bronner, Delinquents and Criminals, 132-145.

36 Goring, The English Convict, 1913.

37 Brooks, Psychology of Adolescence, 406.

A positive correlation is said to exist between abilities and interests. This area should also be investigated. Although too little is definitely known about the amount and distribution of mechanical aptitudes and motor abilities to permit a final comparison of delinquent and nondelinquent youth, some studies have been conducted. The findings are not conclusive. Dougherty[38] employed several tests with 222 boys and girls who appeared in the Los Angeles Juvenile Court and were legally judged delinquents. The results of this group on the Stenquist Mechanical Aptitude Test revealed that the delinquents of both sexes recorded slightly better scores than the New York public school boys who were tested by Stenquist. The delinquent boy was also found by Slawson[39] to approximate the mechanical intelligence and ability of children whose social reactions are considered perfectly normal. Similar findings are reported by Holmes[40] who attempted to answer the question whether or not the abilities of delinquents are high enough to enable them to compete favorably with nondelinquents in various industrial operations. He employed sixty youths who had come under the jurisdiction of the

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38 F. D. Dougherty, "A Study of the Mechanical Ability of Delinquent Children of the Los Angeles Juvenile Court," Journal of Delinquency, X, 293-311.

39 Slawson, The Delinquent Boy, 57.

40 J. A. Holmes, "Occupational Aptitudes of Delinquents," Journal of Genetic Psychology, LXXVIII, 1951, 47-54.

California Youth Authorities for various misdemeanors. They ranged in age from sixteen to twenty-one, with an average age of eighteen. The General Mechanical Aptitude Test, C.M. - 142a, 1945, issued by the Adjutant General's Office, War Department, was used. The data collected from the delinquent group was compared with the general norms for 676 employees of the Benicia Arsenal in California, who were doing mechanical and technical work. The results of this comparison revealed that the aptitude of delinquents in mechanical and technically related fields closely approximated the general norms. The boys seemed to be on a par with those engaged in skilled and semi-skilled trades. They were found to rank above the common laborers in general mechanical aptitude.

Brooks[41] concludes that delinquent and nondelinquent individuals are equal in "tapping" speed, and that in motor abilities both groups are about the same. On some performance tests delinquents do average slightly less than the general population for some ages but so much overlapping exists that differences in motor abilities does not differentiate the two groups.

The level of aspiration of the delinquent and nondelinquent groups may also be a differentiating factor. Symonds[42]

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41 Brooks, Psychology of Adolescence, 406.

42 P. M. Symonds, The Ego and the Self, New York, 1951.

asserts that the level of aspiration refers to what one would like to do or be, called an ideal goal, or that goal which the subject intends to reach referred to as an action goal. The level of aspiration represents the degree to which the persons total background has prepared him to seek prestige and discharge his social responsibilities. High income, status of those about us, and recognition of leadership in the community are all important factors in determining levels of aspiration. Most significant is Darley's[43] contention that the occupational level desired grows out of the level of aspiration of the individual. In the well adjusted individual it is not customary to set the level of aspiration far below a point which undoubtedly can be accomplished nor at a point which greatly surpasses our capabilities. Escalona[44] found a relationship between the emotional adjustment and the level of aspiration. In a later study of adolescents, Gruen[45] varified her findings and stressed the relationship of maladjustment and the level of aspiration. He found students who rated themselves as emotionally unstable on the Rogers Test were inclined to possess either extremely high

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43 Darley, Clinical Aspects of the Strong, 60.

44 S. K. Escalona, "An Application of the Level of Aspiration Experiment to the Study of Personality," Contributions to Education, New York, 1948, 937.

45 E. W. Gruen, "Level of Aspiration in Relation to Personality Factors in Adolescence," Child Development, XVI, 1945, 181-188.

aspiration estimates or fall at the other end of the continuum below their actual performance ability. The well adjusted students tended constantly to aspire for levels slightly above average. It would seem that the maladjusted possess exaggerated fear of failure or desires for status and recognition, while the more stable persons keep a healthy balance between hope and reality. Corsini[46] verified this in his comparative study of delinquent and nondelinquent vocational interests. He collected information from 239 inmates of the Elmira Reception Center, New York. The individuals, sixteen to twenty-one years of age, submitted written statements giving their prime vocational interest. Two hundred and ninety-nine other wards gave oral statements regarding their vocational preference to supervisors at the institution. Corsini selected as a criterion the finding of Bell's[47] Youth Tell Their Story, wherein he has listed the occupational choices of 5,143 youths in the State of Maryland. Their age range was from sixteen to twenty-four. Corsini ranked the occupational choices of the inmates with those of the free youth and with a list of actual occupations of the latter group as presented by Bell, also in rank order. The results gave indication that the interest of the free youth is highest in terms of desired occupa-

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46 R. J. Corsini, "Vocational Interests of Juvenile Delinquents," Journal of Correctional Education, III, 1951, 11-16.

47 H. M. Bell, Youth Tell Their Story, New York, 1938.

tional level. Of the ten areas selected three are in the professional category, (physician, lawyer, teacher) and two are in the technical - highly skilled group (music, engineer). Those interned at Elmira are next in terms of levels of occupation desired, while what the free youth is actually doing was lowest. A conclusion drawn by Bingham[48] is corraborated by Corsini's findings, namely, it is generally true that youth aims slightly higher than what it will achieve. In Table I, below, is a tabular representation of Corsini's findings:

TABLE I

COMPARATIVE RANKINGS OF OCCUPATIONAL INTERESTS OF 538 INTERNED DELINQUENTS USED IN CORSINI'S STUDY AND THE VOCATIONAL PREFERENCES AND ACTUAL OCCUPATIONS OF 5,143 FREE YOUTHS STUDIED BY BELL

VOC. INT. OF CORSINI'S DELINQUENTS	VOC. INT. OF BELL'S FREE YOUTH	ACTUAL OCCUPATIONS OF BELL'S FREE YOUTH
1 Auto Mechanic	Engineer	Farm Laborer
2 Carpenter	Mechanic	Industrial Laborer
3 Electrician	Farmer	Inside Sales
4 Machinist	Aviator	Unpaid Family Worker
5 Farmer	Physician	Textile Worker
6 Tailor	Lawyer	Clerk
7 Baker	Electrician	Truck Driver
8 Painter	Teacher	W.P.A.
9 Plumber	Machinist	C.C.C.
10 Printer	Musician	Helper

48 W. V. Bingham, Aptitudes and Aptitude Testing, New York, 1937.

Examination of Table II below, reflects a major discrepancy in the skilled work category. Sixty-six per cent of the delinquent group aspired this level, yet only 4.3 per cent of Bell's group was actually employed in these occupations. Also, 40 per cent of the free youth were actually performing in the domestic personnel and office-sales occupations while a total absence of desire to be employed in these areas is lacking in the delinquent group:

TABLE II

PERCENTAGE COMPARISON OF OCCUPATIONS REFLECTED IN THE VOCATIONAL INTERESTS OF CORSINI'S 538 DELINQUENTS AND THE ACTUAL OCCUPATIONS OF BELL'S 5,143 FREE YOUTHS

Occupations	Per cent of Delinquent Voc. Interests	Per cent of Free Youth Occupations
1 Professional-Technical	4.9	7.5
2 Managerial	.1	4.1
3 Office Sales	0.0	27.1
4 Skilled	66.0	4.3
5 Semi-skilled	22.0	24.9
6 Unskilled	7.0	14.6
7 Domestic-Personal	0.0	11.4
8 Relief	0.0	5.9
9 Others	.25	.2

From Corsini's study we can draw the following conclusions:

1. The interests of the reformatory inmates are definitely circumscribed, the occupational aspirations of 50 per cent

of the 538 inmates being relegated to five trade preferences and 93 per cent of the stated interests being encompassed by twenty-seven trades or occupations.

2. A comparison of the vocational interests of the free youth and delinquent youth indicates the former group to have aspirations for higher level occupations. None of the main ten choices of the delinquent group are found in the highly technical professional areas, while five of the ten first choices of the free youth are located there.

3. The inmates possess levels of aspiration much higher than they will or can achieve in terms of occupational level.

4. More than ten times as many of the inmates wish to become skilled tradesmen as will actually achieve these goals.

Capwell,[49] Symonds,[50] Tappan,[51] Kelly[52] and Weeks[53] all prove that personality maladjustments occur much more fre-

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49 D. Capwell, "Personality Patterns of Adolescent Girls," Journal of Applied Psychology, XXIX, 1945, 289-298.

50 P. M. Symonds, The Psychology of Parent-Child Relationships, New York, 1939.

51 P. W. Tappan, Juvenile Delinquency, New York, 1949.

52 T. L. Kelly, "Mental Aspects of Delinquency," University of Texas Bulletin, 1917, 8.

53 H. A. Weeks, "Predicting Juvenile Delinquency," American Sociological Review, VIII, 1943, 40-46.

quently in delinquent than in nondelinquent personalities. If the conclusions from the preceeding studies are accepted, the existing differences in personality are all important. Darley[54] maintains, after a study of eighty maladjusted adult cases, that interests are outgrowths of personality and it is very possible that personality maladjustments are reflected in the intensity and patterning of vocational interests. Ford[55] and Williamson[56] also state that even mild abnormal personality traits and personal maladjustments are important determinants in the choosing of a general life's work or the pursuit of a more specific occupation. Strong[57] and Carter[58] reflect similar views. The former feels that there is a relationship between vocational interests and the attitudes and personality factors of the individual. The latter contends that "vocational interests are a manifestation of deeply ingrained traits of personality". However, other investigators reflect a different point of view. Tyler,[59] after

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54 Darley, Clinical Aspects of the Strong, 8.

55 A. Ford, A Scientific Approach to Labor Problems, New York, 1931.

56 E. G. Williamson, How to Counsel Students, New York, 1931.

57 Strong, Vocational Interests of Men and Women, 511.

58 Carter, Vocational Interests and Job Orientation, 52.

59 L. E. Tyler, "Relationship Between Strong Vocational Interest Scores and Other Attitude and Personality Factors," Journal of Applied Psychology, XXIX, 1945, 58-67.

surveying the results of scores on various personality and attitude scales, found no relationship between neurotic indicators and interest scores on the Strong Vocational Interest Blank. Fowler[60] concludes that there seems to be general agreement that interest test scores are not a dependable basis for conclusions regarding the attitudes or adjustment of the student. Klugman[61] actually attempted to determine whether a relationship existed between general adjustment status as measured by the Bell Adjustment Inventory and the spread of vocational interests on the Kuder Preference Record profile scores. He employed 108 World War II veterans who had completed the eighth grade. They had been sent to the Veteran's Administration University of Pennsylvania Guidance Center for advisement. The findings indicated that reliably better adjustment scores were obtained by those with stronger scientific interest scores. (Above the 50 per cent on the Kuder profile) Those with weak artistic scores (below 50 per cent), indicated fair certainty of difference in their favor regarding adjustment. Had the social service score on the Kuder yielded a C.R. of 1.98 instead of 1.92 it would have been significant at the .5 per cent level of confidence.

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60 Fowler, "Interest Measurement-Question and Answers," School Life, XXVIII, 25-29.

61 S. F. Klugman, "Spread of Vocational Interests and General Adjustment Status," Journal of Applied Psychology, XXXIV, 1950, 108-114.

General adjustment status for those with stronger scientific interests was significantly better than those with stronger artistic interests, social service interests, mechanical and musical interests. To a lesser extent the better adjusted also had stronger computational interests. The stronger artistic interests the poorer adjustment. The data he obtained from the Kuder reflecting vocational interests, however, was not essentially different from the normal population.

Feather,[62] too, while employed as a counselor at the University of Michigan, suspected a relationship between the personality adjustment problems of his counselees and their vocational preference patterns. He attempted to test the hypothesis as to whether people get into a certain occupation as a result of their particular personality synthesis. Feather employed the MMPI and the Kuder Preference Record as the basis for his study. Five hundred and three cases were employed. Three-fourths of the subjects were veterans attending the University of Michigan under P.L. 346. About one-fourth of the group was composed of nonveterans. They were divided into normal and maladjusted sections on the basis of the score attained on the MMPI. Individuals with T scores of seventy or above were considered maladjusted and those with T scores below

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62 D. B. Feather, "The Relationship of Personality Maladjustments of 503 University of Michigan Students to Their Occupational Interest," Journal of Social Psychology, XXXII, 1950.

seventy were classified as normal. One half of them could be considered seriously abnormal on the basis of their MMPI score. After the significance of the differences between the normal and maladjusted groups on the Kuder were determined, it was found that the former had significantly more individuals with high scores on the mechanical and scientific scales and fewer individuals with significant scores on the musical, literary and artistic scales. These differences, with the exception of the artistic scale were significant at the 1 per cent level of confidence. The artistic scale was found to be significant at the 5 per cent level. It is obvious that the reverse would be true for the maladjusted groups. Further evaluation of combinations of interests indicate that a person on combined mechanical-scientific, mechanical-persausive, mechanical-musical or mechanical-social service scales would be more apt to be normal than maladjusted. Persons with artistic-literary, literary-musical, artistic-musical or literary-clerical combinations would be more apt to be maladjusted than normal. The maladjusted individuals indicated a marked lack of identification with the mechanical, computational and scientific areas. The normal group had significantly more low scores on the literary and the social service areas. It is then obvious that normal individuals have a tendency to reject social service and literary occupations as the areas are classified by Kuder. The maladjusted individuals reject the mechanical, computational

and scientific occupations.

It can be implied from this particular study that a significant relationship exists between one's personality adjustment and his occupational preference. The results of Feather's study are given below in Table III:

TABLE III

SEPARATE AND COMBINED OCCUPATIONAL INTEREST AREAS OF NORMAL AND MALADJUSTED UNIVERSITY OF MICHIGAN STUDENTS ON THE KUDER PREFERENCE RECORD

Normal	Maladjusted
Mechanical	Literary **
Scientific	Musical **
Mechanical-Scientific**	Artistic *
Mechanical-Persuasive*	Artistic-Literary**
Mechanical-Musical *	Literary-Musical **
	Artistic-Musical *
	Literary-Clerical*

* Significant at the 5 per cent level
** Significant at the 1 per cent level

A synthesis of the literature on the development of vocational interests and a comparison of delinquent and nondelinquent preferences in the vocational field reveals much disagreement amongst educational, sociological and psychological investigators. Many adhere in various degrees to the theory that vocational interests reflect the sum total of deeply ingrained personality factors and personal experiences. Others maintain

that vocational interests are specialized and do not pervade all phases of the individuals life and are determined by more contemporary needs and presses.

Recent authors do not accept the older theories of delinquency. They also refuse to accept those theories regarding the development of vocational interests that were adhered to in the past. It is now generally accepted that neither the development of interests nor the manifestations of delinquent behavior is a cataclysmic or an abrupt transformation, but a gradual evolution affected by much of our environmental stimuli.

It is also evident that innumerable hypotheses have been made regarding the existence of similarities and differences in the vocational interests of those displaying delinquent and nondelinquent behavior patterns. A few definite conclusions are recorded but the purpose of much of this material is to stimulate other studies of vocational interests and vocational guidance. Investigators are gradually becoming aware of the increasing importance of both.

It must be concluded that both delinquents and nondelinquents may possess unpatterned, depressed, or clearly delineated areas of vocational interest and may be evanescent or permanent in their vocational selections.

In a final analysis of the literature, it is found that these most important innate and external factors are the basis for differentiating the vocational interests of the two

groups: physical traits; mental endowment; native and acquired abilities; level of aspiration; socio-economic status; personality factors of self, parents and associates; family, school and social adjustment; occupations of parents and friends with whom one associates, and contacts with activities in which interests can be developed.

CHAPTER III

THE INSTRUMENT

The KPR attempts to employ a systematic approach to the selection of an occupation. It is designed to measure preferences for broad fields of interests and is intended for use in the vocational and educational guidance of adolescents and adults of both sexes. The employment of the tool with those in pubescence has also proved profitable. By means of the scores obtained one may direct the subject's attention to vocations they may not be familiar with but do involve activities of the type for which they express preferences. One may also check on whether a persons choice of an occupation is consistent with the type of thing he ordinarily prefers to do. The KPR is also valuable in employee counseling with emphasis on occupational placement. Providing an individual possesses the ability, his efficiency and personal satisfaction can often be markedly improved by placement in an occupation for which he has indicated preference. The KPR presupposes that people do their best and enjoy themselves when they are interested in what they are doing. The test is one of preferences and not one of abilities. It is constructed on a

rational basis, has 168 items each composed of three sub items and employs a forced choice technique, whereby the subject selects the most liked and least liked activities listed.

Some investigators say that selection of one item out of three does not warrant their stating that the individual is interested in the task chosen. He merely prefers it where he is forced to make a choice. They maintain further that there is a difference between vocational interests and mere preferences. However, it seems reasonable to suggest that on the KPR when all of these individual items are totalled, the scores obtained for the various vocational areas reflect an interest or a disinterest in certain occupational fields whether the individual is aware of it or not. Carter[63] indicates that a vocational interest is the sum total of all personality characteristics which are significant for vocational satisfaction. The individuals liking or preferring a certain activity is also a vocational interest if the task or duty constitutes an occupation or an essential part of some occupation. Fowler admits that "single expressions of liking may have limited value in counseling. But a systematically obtained pattern or aggregate of such single expressions can make it possible to say that 'a man has mechanical or scientific interests' (such an expression as is afforded for the KPR); or

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63 Carter, "The Development of Vocational Attitudes," Journal of Consulting Psychology, IV, 185-191.

that he has 'interests of an engineer or a lawyer'."[64]

Bingham,[65] too, reflects the attitude that we prefer what we would like to do, and we like to do things in which we have an interest. Strong eliminates completely the suggestion that interests and preferences as reflected by various vocational measures differ. An interest is a response of liking and must be dealt with in a quantitative objective way.[66] Three modes of doing this are "a.) a single expression as 'I like arithmetic'; b.) a general tendency toward a constellation of items, as when we state that a man has mechanical or scientific interests; and c.) as a total score on an interest inventory as a lawyer, or a high masculinity - femininity score".[67]

Because numerous other authorities including Klugman,[68]

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64 Fowler, "Interest Measurements-Questions and Answers," School Life, XXVIII, 25.

65 Bingham, Aptitudes and Aptitude Testing, 61.

66 Strong, Vocational Interests of Men and Women, 6.

67 ibid. (i.e., 19)

68 Klugman, "Spread of Vocational Interests and General Adjustment Status," Journal of Applied Psychology, XXXIV, 108-114.

Capwell,[69] Cottle[70] and Feather[71] employed the KPR in various research studies and speak of the total preference profile as reflecting vocational interests, it may be concluded, therefore, that vocational interest and vocational preference tests do basically measure the same thing.

In the administration of the Kuder Record the subjects are usually given the KPR booklet and an inserted filler upon which the individual records his selections. They are told to read the instructions and begin. The reading aloud of the instructions by the examiner is often desirable, depending upon the individual or upon the group being tested. Proctoring is advised. There is no time limit for administration but most college students and adults complete the record in about forty minutes. On occasion adults and high school students demand additional time for completion. The scores representing the ten areas of preference are easily obtained by counting the pin holes appearing on the various sections of the four page filler that was inserted into the booklet. IBM method of scoring can also

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69 Capwell, "Personality Patterns of Adolescent Girls. II. Delinquents and Nondelinquents," Journal of Applied Psychology, XXIX, 289-298.

70 W. C. Cottle, "Relationships Among Selected Personality and Interest Inventories," Occupations, XXVIII, 1950, 306-310.

71 Feather, "The Relationship of Personality Maladjustments of 503 University of Michigan Students to Their Occupational Interests," Journal of Social Psychology, [illegible] 71-78.

be employed. The conversion of raw scores into percentile rank, is done by merely recording the raw scores on a KPR profile sheet. The preference profile is then complete. Significantly high percentiles of seventy-five or above and low percentiles of twenty-five or below are of prime importance in interpretation. Low scores indicate categories or areas of lesser attraction for the subject.

Kuder first published Form A of the KPR in 1939, after he had conducted research with his instrument for six years. The paired item technique was used and seven interest areas were represented.

Unlike the Strong Blank which was developed on various occupational groups and resulted in interest norms for each group, Kuder's tool was first developed at Ohio State University with the aid of student groups. The individual keys were constructed on the basis of internal consistency and mutual independence. Individual items of the records were examined for statistical agreement with other items which seemed to be of the same type and these items which were similar were grouped and constituted a single scale. Further inspection of the items seemed a sufficient basis for naming the scale, just as the inspection of the items of a mathematic test allows one to feel safe in calling it a mathematic test and not one of history or latin. For example, the literary scale was so named because the items constituting it were inspected and judged to be literary in na-

ture. As the other scales were constructed, each item was checked as to its independence of other existing scales. Independence of each scale was therefore assured. This resulted in a relatively low intercorrelation, ranging from -.43 for the mechanical-literary scales to .50 for the computational-clerical scales where the highest relationship is expected. These correlations were obtained from the records of 2,500 adult males. Numerous other scales were also developed but dropped because they lacked independence or internal consistency. The scales finally accepted were the computational, scientific, persuasive, artistic, literary, musical and social science.

Kuder[72] presented Form B, the first revision, in 1942. This modification and addition to the original edition was prompted by suggestions received from testers after extensive experience with the KPR. This resulted in the addition of mechanical and clerical measures. The new scales were developed with emphasis on internal consistency, without regard to correlation with other scales. This experimental form was given to college students who had previously filled out the original records. More items were now included in the test but an increase in the time required to complete the form was not desired. The triad

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72 G. F. Kuder, Revised Manual for the Kuder Preference Record, Science Research Associates, Chicago, 1951, 25-27.

form item was then decided upon, where the subject was requested to select the activity most liked and the one least liked. No loss of reliability resulted in the change from the doublet to the triad form.

In 1944, an expressed need for a measure related to agricultural, naturalistic and outdoor activities was recognized. A large number of items designed to measure preferences in that area were tried out on groups of students and adults. The better items were then selected and retained in what is referred to as the outdoor scale. It was recognized that a method identifying those who answered carelessly or without understanding of the items would be invaluable. A scale was devised and composed of items that almost everyone selected. Those answering honestly and sincerely received scores from 38 to 44 inclusive. Carelessly answered records yielded much lower scores. The score recorded by chance alone was twenty-five. Thus, the validity scale came into being.

At first, the small number of occupational norms and validation data resulted in reluctant use of the KPR. In the past sixteen years, however, numerous research projects have produced favorable findings which has resulted in general acceptance of this easily administered and economical instrument.

The first external evidence of the tools validity was its ability to differentiate students majoring in various professional fields at the college level. This was based on re-

cords of small groups ranging in size from ten to one hundred. In the 1946 revision, however, norms for 2,667 adult men were classified according to forty-four occupational groups. Occupational listings were given and based on the records of 1,429 females. The number employed in the formulation of each occupation norm ranged from sixteen to 165.

Norms based on the records of 3,418 boys and 4,466 girls were published in the January 1950 revision of Form C.

The second revision, March 1951, lists several hundred occupational profiles based on 15,000 records. As few as twenty records are used as a basis for occupational profiles in a few instances and over 1000 were employed in constructing nurses profiles. As desired, chemists are found unusually high on the scientific scale, writers high on the literary scale, musicians secure highly significant scores on the musical scale, clerks on the clerical scale and so forth.

Regarding validity, Cronbach[73] states the logical validity of the Kuder is high since a mechanical or other interest score indicates self reported liking for the activity involved in that area. Many favorable validity findings are also present-

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73 L. J. Cronbach, Essentials of Psychological Testing, New York, 1948, 346.

ed by Lehman[74] and she concludes that the scales validity is quite satisfactory from actual occupational selection and successes.

Barry[75] found that girls preparing for occupations as physicians, nurses, dental technicians and pharmacists were all high on the scientific scale. Those desiring nursery school occupations, school teaching, social work, theology or missionary careers consistently score significantly high on the social service scale.

Kopp and Tussing[76] found a correlation of .59 between Kuder rankings and the personal occupational preferences of graduate high school boys who were seeking occupations in the areas they listed. In a similar study, Crosby and Winsor[77] used descriptions of the nine Kuder categories in an effort to determine the validity of a group of college student's estimates of their own interests. A correlation of .54 between percentile

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74 R. Lehman, "Interpretation of the Kuder Preference Record for Students of Home Economics," Educational and Psychological Testing, New York, 1948, 346.

75 C. M. Barry, "Kuder Preference Record Norms," Occupations, XXII, 1944, 487-488.

76 T. Kopp and L. Tussing, "The Vocational Choices of High School Students as Related to Scores on Vocational Interest Inventories," Occupations, XXV, 1947, 334-339.

77 R. Crosby and A. L. Winsor, "The Validity of Student Estimates of Their Interests," Journal of Applied Psychology, XXV, 1941, 408-414.

scores on these categories and the students own estimate of their percentile ranking was obtained.

Phillips and Osbourne[78] discovered that four hundred college students majoring in business administration scored significantly higher than non-business students on both clerical, persuasive and computational scales.

In an extensive study by Triggs, 826 graduate nurses were employed and it was discovered that they scored much higher on the scientific and social service scales than the general female population.

Sixty mature service veterans, ranging in age from nineteen to forty were studied by Rose.[79] Correlations of between -0.5 and 0.99 were registered between interest in a particular occupational area and Kuder percentile rankings. The median correlation was 0.64.

Although some correlations presented above do not seem to be unusually high we must remember that the revealing of new occupational areas is also one of the prime objectives of the KPR.

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78 W. S. Phillips and R. T. Osbourne, "A Note on the Relationship of the Kuder Preference Record Scales to College Marks, Scholastic Aptitude and Other Variables," Educational and Psychological Measurement, IX, 1949, 331-339.

79 W. Rose, "A Comparison of Relative Interest in Occupational Groupings and Activity Interests as Measured by the Kuder Preference Record," Occupations, XXVI, 1948, 302-307.

Super[80] concludes that the extensive research findings now available justify the conclusion that the Kuder Preference Record has been sufficiently well standardized and validated for use in vocational guidance and counseling. Although some of the original norms employed by Kuder were based on unusually small groups, it was discovered later, when norms were obtained from much larger populations, that the addition of these records to Kuder's original findings resulted in only minor and insignificant profile changes.

Kuder's[81] summary of the reliability findings of several authors for various educational and economic groups on the Kuder Preference Record is given in Table IV and presented on the following page.

It will be noted that the reliability formula developed by Kuder and Richardson appears six times in the Table. Generally the Kuder-Richardson formula obtains figures which slightly underestimate the true reliabilities. In spite of this, the average reliabilities for the different scales of the Kuder Preference Record are all close to .90. The median for the entire Table is .91.

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80 D. Super, "The Kuder Preference Record in Vocational Diagnosis," Journal of Consulting Psychology, XI, 1947, 193.

81 Kuder, Revised Manual For The Kuder Preference Record, 20.

TABLE IV

THE RELIABILITY COEFFICIENTS OF THE SEPARATE SCALES OF THE KUDER PREFERENCE RECORD FOR VARIOUS EDUCATIONAL AND ECONOMIC GROUPS

Group	No. of Cases	Sex	1 Mec	2 Com	3 Sci	4 Per	5 Art	6 Lit	7 Mus	8 Soc	9 Cle
Graduate Students	41	M&F	.97	.98	.95	.97	.96	.95	.95	.93	.98
College Students Kuder-Richardson	166	M	.94	.90	.93	.93	.91	.90	.90	.91	.89
College Students Kuder-Richardson	101	F	.91	.88	.88	.94	.90	.92	.85	.90	.86
College Students	50	F	.85	.87	.91	.81	.95	.84	.96	.92	.95
High School Seniors Kuder-Richardson	125	M	.93	.90	.90	.82	.91	.91	.90	.87	.87
High School Seniors Kuder-Richardson	125	F	.89	.83	.89	.80	.92	.91	.91	.93	.90
Eighth Grade Pupils Kuder-Richardson	100	M&F	.96	.86	.92	.84	.92	.86	.93	.91	.89
Men in Occupations Kuder-Richardson	300	M	.95	.91	.89	.89	.90	.93	.94	.93	.88

From the numerous investigations that have been conducted with the KPR since its introduction some eighteen years ago, it can be concluded that its reliability and validity have been adequately established. Numerous investigators state that the favorable research findings guarantee its validity. The tool is used extensively by personnel in the fields of counseling and guidance. It is employed with adult and adolescent clientele

and Rose[82] holds that the KPR is reasonably reliable for age groups as low as the eighth grade. This gives some indication of its general acceptance.

82 W. Rose, "A Comparison of Relative Interest in Occupational Groupings and Activity Interests as Measured by the Kuder Preference Record," Occupations, XXVI, 306.

CHAPTER IV

DESIGN OF THE RESEARCH

This study deals with areas of vocational preferences of delinquent and nondelinquent boys. The first problem confronting the writer was the selection of some criteria whereby the two groups would be distinguished.

As a basis for the selection of this particular delinquent group it was decided that the term delinquent should be confined to those individuals who are technically such because of contact with the court. The definition of delinquent, therefore, is a person who has been judged delinquent by the authorized courts of Illinois.

The group designated as nondelinquent was to be considered so on the basis of the following inquiry to be made of school officials possessing most information about the subjects selected:

> To your knowledge, are any of the individuals selected guilty of incorrigibility, truancy, sex crimes, auto theft, burglary or any other misdemeanor or infraction that, if brought to the attention of civil authorities, would provide a basis for classifying the student as delinquent?

A positive reply would eliminate a subject from further consideration.

It was decided that all boys selected for the study would be eighth grade graduates who had completed some high school work. Other requirements were that the boy be white, between the ages of fifteen and seventeen inclusive, and that he possess at least average intelligence. A grade placement reading comprehension score on the Stanford Achievement Test, reading examination, of at least 8.4 was deemed necessary for understanding the items of the Kuder Preference Record.[83] No boy possessing a physical deformity that could possibly influence his vocational selection was included.

The delinquent subjects used in the study were obtained from the Illinois State Training School for Boys, at St. Charles, Illinois. All information regarding the delinquent group was obtained from personal files, social case histories and from responses to inquiries made of social workers and pyschologists at the institution.

After a check of the records at the training school as of May 1, 1952, it was discovered that 251 white boys were included in the institution's population and available for the study. Out of the 251 potential subjects, however, only fifty-seven met with the criteria adopted. Forty-three of these wards

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83 B. Stefflre, "The Reading Difficulty of Interest Inventories," Occupations, XXVI, 1947, 95-96.

were enrolled at the institution's high school at the time of testing.

A testing schedule for the delinquent boys was then set up but could not be rigidly adhered to because some boys had other necessary appointments at the time of testing. The absentees would be tested at the next scheduled session. It was advised by the institution personnel that only five or six boys be tested at one time. After the first meeting, however, the conduct of the boys was found most acceptable so the number was increased.

The testing was done in a classroom at the training school set aside for the administration of a battery of group tests administered to all new arrivals at the institution. The examiner was introduced to the group by the Supervising Psychologist and they were told that he was requested to test the group and secure records for vocational advisement. The results were to be considered in the vocational placement of the boy at the institution and as a partial basis for the vocational guidance phase of the final counseling sessions upon termination of the ward's internment at the school.

In the testing of each group of delinquent boys the KPR booklet and filler, Form CH, were placed on each desk that was to be occupied. The method for administration presented in the KPR booklet was followed. The directions were read by the

examiner and the blackboard was employed to further clarify the instructions. The subjects were then permitted to ask any further questions regarding the KPR or the testing situation. This was essential because some of the boys were very apprehensive and complete explanation of all inquiries was necessary to secure their full cooperation. After the boys began, the investigator checked the first column of recorded responses and asked each ward individually if he understood what was to be done. There were no other interruptions nor unnatural noises to interfere with the testing procedure. The subjects were allowed ample time because the entire morning or afternoon period was devoted to testing. Because of the nature of the project, and because of the full explanations given to their inquiries, the wards appeared to cooperate fully. Upon completion of the assignment the records were checked individually to see if all sections had been properly completed. A few omissions were noted and were corrected by the subjects. At the conclusion of the testing session, the boys were sent back to school or to various details assigned them.

Thirteen records yielded validity scores which were not acceptable. The boys were retested at other sessions and the validity scores secured from the KPR's were found satisfactory on seven of the records. The investigator did not think further retesting was warranted where two attempts produced

validity scores that were not acceptable.

The delinquent group finally selected consisted of fifty white, adolescent boys, who met with the previously adopted criteria. The age, number of subjects available and number selected for the study is found in Table V:

TABLE V

DELINQUENT SUBJECTS AT THE ILLINOIS STATE TRAINING SCHOOL FOR BOYS BY AGE, NUMBER AVAILABLE AND NUMBER SELECTED

Age	Number Available	Number Selected
15	108	10
16	105	27
17	38	13
Total	251	50

The boys selected had been interned at the institution for the offenses listed in Table VI, which is presented on the following page.

On the basis of the information secured from the files of the delinquent group at the training school, a control group of Chicago high school students was selected. An attempt was made to secure a comparable group of students on the basis of age, school grade, IQ, father's occupation, residential area and religion.

TABLE VI

THE NUMBER AND TYPES OF OFFENSES OF DELINQUENT BOYS IN THE SAMPLE LEADING TO INTERNMENT AT THE ILLINOIS STATE TRAINING SCHOOL FOR BOYS

Offense	No. Interned
Accessory to Shooting	2
Burglary	9
Burglary and Truancy	5
Drunkeness	2
Forgery	3
Incorrigibility	3
Sex Offense	2
Stolen Car or Accessories	15
Strong Armed Robbery	2
Theft (Miscellaneous)	2
Truancy and Chronic Runaways	5
Total	50

The KPR is included in a battery of tests given in the Self Appraisal and Careers Course offered in most Chicago secondary schools. Three public high schools, namely, Amundsen, Hyde Park and Kelly, and one Catholic secondary school, Mundelein Cathedral, each in different sections of the city were chosen as the schools from which the control group would be selected. The KPR had been given the public school students in late February or March by qualified instructors according to the method proposed in the KPR booklet. The investigator was allowed access to school files for data on these potential subjects. Other information was supplied by the instructors of the careers course

and by adjustment teachers at the schools.

At Mundelein, where the KPR is not given, it was administered by the examiner on the afternoon of May 27. Permission was granted to recruit the students the author desired for the study. The students in attendence came from a large area of the city. This allowed the investigator to match them with the delinquents who came from districts outside those covered by the other three schools. In many instances the boys paired came from the same square block. In thirty-seven cases the students came from within about one mile of the home of the institutionalized ward with whom he was matched. The distance was slightly greater in the remaining instances but radical neighborhood changes were avoided. The information regarding the selection of the nondelinquent group is given below in Table VII:

TABLE VII

HIGH SCHOOLS FROM WHICH NONDELINQUENT SUBJECTS WERE OBTAINED, THE NUMBER OF KUDER PREFERENCE RECORDS AVAILABLE AND THE NUMBER SELECTED

High School	Number of KPR's Available	Number Selected
Amundsen	197	20
Hyde Park	161	6
Kelly	126	12
Mundelein	12	12
Total	496	50

After the selection of the delinquent and nondelinquent groups, each group consisted of thirteen boys seventeen years of age, twenty-seven boys sixteen years of age and ten boys fifteen years of age. The mean CA for both groups was 16.6 and the standard deviation for both groups was .68.

One delinquent and four nondelinquent boys were in the twelfth grade; eight delinquents and thirty-eight nondelinquents were in the eleventh grade; sixteen delinquents and five nondelinquents were in the tenth grade, and twenty-five delinquents and three nondelinquents were in the ninth grade. Since delinquents are usually below the nondelinquents in grade placement, some disparity was expected. The mean grade placement for the delinquent group was 9.7 with a SD of .73, as compared to a mean grade placement of 11.2, with a SD of .69 for the nondelinquent group.

In spite of some reports that the correlation between intelligence and vocational interests is zero, attempt was made to control the intellectual variable. All boys at the training school are given the Wechsler-Bellevue Intelligence Scale as soon as possible after arrival. The score for each boy was secured from his personal psychological file.

Kuhlmann-Anderson scores were available for thirty-nine of the nondelinquent group. Revised Stanford-Binet, Form L, scores were available for the remaining eleven students. These

scores were obtained from the adjustment teacher's records and cumulative record cards maintained by the school. Because of the varied instruments involved, familiar qualitative terms were paired with IQ ratings falling within certain limits. This method is based on a procedure similar to Wechslers[84] and is presented in the following Table:

TABLE VIII

PAIRING OF QUALITATIVE INTELLECTUAL MEASURES WITH IQ SCORES FOR ONE HUNDRED DELINQUENT AND NONDELINQUENT BOYS

	Wechsler Bellevue	Revised Stanford-Binet Form L	Kuhlmann Anderson
Average	90-110	90-109	95-104
Superior	111-119	111-119	105-114
Very Superior	120-127	120-133	115-124

The range of intelligence of the delinquent group was from ninety to 127. The intelligence scores for the nondelinquent group ranged from ninety-three to 133 on the Binet, and ninety-five to 121 on the Kuhlmann-Anderson. A spread of not more than six points was the rule in matching the individuals. Exceptions were

84 D. Wechsler, Measurement of Adult Intelligence, Baltimore, 3rd ed., 1944, 37.

made if the IQ was the only incongruity. In these cases up to a ten point spread was allowed. This occured in only nine cases. Information relating to the intelligence of the subjects used is given in Table IX:

TABLE IX

THE INTELLECTUAL DISTRIBUTION OF THE ONE HUNDRED DELINQUENT AND NON-DELINQUENT SUBJECTS

	Delinquent	Per Cent	Nondelinquent	Per Cent
Average	36	72	34	68
Superior	11	22	13	26
Very Superior	3	6	3	6
Total	50	100	50	100

Thirty-one of the delinquent group were of the Roman Catholic faith and nineteen of Protestant denominations. The religious affiliations of the nondelinquent group was the same, but in seven instances a Catholic boy in one group was matched with a Protestant boy in the other. This was allowed because in all instances the boys were unusually well matched in other respects.

Since the father's occupation greatly influences the vocational selection of the male offspring, attempt was made to

match students whose fathers were employed in similar occupational areas. The job classifications or grouping norms presented by the Kuder Examiners Manual[85] based on the United States Census Bureau Reports was used. Many fathers in the two groups had closely related occupations. This was especially true for craftsmen and allied workers, like mechanics, machinists and metal workers, and for the operatives and kindred workers like truck drivers, attendants and factory employees. This occupational information is presented in Table X below:

TABLE X

DISTRIBUTION OF FATHER'S OCCUPATION FOR THE ONE HUNDRED DELINQUENT AND NONDELINQUENT SUBJECTS

Classification	Delinquent Fathers	Per Cent	Nondelinquent Fathers	Per Cent
Clerical-Kindred Wkrs.	7	14	9	18
Craftsmen-Kindred Wkrs.	14	28	16	32
Operatives-Kindred Wkrs.	13	26	12	24
Professional	1	2	1	2
Proprietor Small Business	4	8	4	8
Service Wkrs.	6	12	6	12
Information not available	5	10	2	4
Total	50	100	50	100

Where the father was deceased or his whereabouts unknown, the

85 G. F. Kuder, Examiners Manual for the Kuder Preference Record, Science Research Associates, Chicago, 1951, 21-25.

mother or other siblings supported the family. None of the families were dependent on public or private social welfare agencies for support.

CHAPTER V

ANALYSIS OF THE DATA AND THE RESULTS

Statistical analysis employing the group method is useful in scientific study and is the most economical for acertaining the general characteristics of a delinquent or maladjusted group.[86] Quantitative statistical computation will be employed because the objective is to discover whether variations in vocational preferences between a delinquent and nondelinquent group of boys exists when several variables are controlled.

It must be remembered that a raw score on the Kuder merely represents the sum of the weights given to the items composing a particular area of vocational preference. It must also be pointed out that the percentile rank is the important interpretative factor, rather than the raw score on the KPR. The percentile rank of the mean scores is presented for all occupational and group profiles and is the important norm in research studies involving this tool. Therefore, mean percentile scores

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86 J. W. and E. K. Bridges, "A Psychological Study of Juvenile Delinquents by the Group Method," Genetic Psychology Monographs, I, V, 1926.

for each group on the ten vocational areas were found. Standard deviations of these means for each area were then computed. The raw scores and percentile ranks of each individual record are presented in the appendix.

For the delinquent group, the three highest vocational interest areas were found to be artistic, clerical and literary. The two lowest areas of interest were the scientific and outdoor.

On the other hand, the nondelinquent group recorded the highest mean scores on the mechanical, clerical and artistic scales, in that order. Low mean scores for the nondelinquent group were found on scales representing the musical and persuasive preferences.

However, the prime objective of the study was to determine any significant difference in performance between these two groups on the KPR. In order to determine the reliability of the results and to provide for an accurate interpretation of this data, the performance of the two groups was evaluated against the Null Hypothesis, i.e., that no real difference exists between the performance of the two groups on each individual scale other than would be expected through the operation of chance factors or sampling errors. The t ratio was employed to indicate the reliability of the difference between means.

Student's[87] table of t values was consulted to determine the confidence levels at 98 degrees of freedom, as is the case in the present study. To be significant at the .05 level of confidence a t ratio of 1.98 is required. To be very significant, i.e., at the .01 level of confidence, a t ratio of 2.63 is demanded.

A difference in mean percentile rank of 16.32 was evidenced on the mechanical scale. A t ratio of 2.99 was discovered and was significant beyond the .01 level of confidence. A difference in means of 15.38 was noted between the two groups on the scientific scale, yielding a t ratio of 2.92, also significant beyond the .01 level of confidence. A difference of 11.24 in mean scores on the outdoor scale produces a t ratio of 2.00, significant beyond the .05 level of confidence. Had a t ratio of 1.98 instead of 1.75 and 1.71 been obtained on the musical and persuasive scales respectively, .05 significance levels would also have been secured. The delinquent group ranked 10.04 and 8.68 percentile points higher than the nondelinquent group on those two scales. This information is presented in the table on the following page.

It will be noted that the significant differences on the mechanical, scientific and outdoor scales are found because

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87 H. E. Garrett, Statistics in Psychology and Education, 3rd ed., New York, 1947, 190-191.

the nondelinquent group secured higher scores than the delinquent group. It must be remembered that several factors, important in the determination of vocational preferences, were controlled. The question naturally arises as to why these differences occured.

TABLE XI

MEAN PERCENTILE RANK, STANDARD DEVIATION OF THE MEAN DIFFERENCE BETWEEN MEANS AND THE RELIABILITY OF THE DIFFERENCE IN THE COMPARISON OF DELINQUENT AND NONDELINQUENT VOCATIONAL INTERESTS

	Del. Boys N = 50		Nondel. Boys N = 50			
Scale	Mean P.R.	SD	Mean P.R.	SD	D	C.R.
Outdoor	41.06	28.67	52.30	26.90	11.24	2.00**
Mechanical	41.66	25.31	57.98	28.66	16.32	2.99*
Computational	42.32	27.11	51.78	29.19	9.46	1.66
Scientific	33.26	22.27	48.64	29.40	15.38	2.92*
Persuasive	53.62	25.77	44.94	24.50	8.68	1.71
Artistic	57.16	27.29	52.48	29.68	4.68	.81
Literary	53.88	28.31	49.76	29.15	4.12	.71
Musical	53.60	26.77	43.56	30.04	10.04	1.75
Social Service	52.40	27.31	46.10	27.04	6.30	1.15
Clerical	55.34	29.79	54.84	30.07	0.50	.08

* Significant at .01 Level of Confidence
** Significant at .05 Level of Confidence

Primarily, Klugman,[88] using the KPR, found that the better adjusted individuals secured reliably higher scores on

88 Klugman, "Spread of Vocational Interests and General Adjustment Status," Journal of Applied Psychology, XXXIV, 114.

the scientific scale. Darley's[89] contention is that individuals reflecting interests in more technical occupations show a tendency for better home and emotional adjustments. If these findings are accepted the nondelinquent group would be expected to secure higher scientific scores.

Corsini[90] discovered higher scientific and mechanical interests in free youth as compared to individuals interned at reform schools. It seems that free youths choose higher occupational levels that are available in the technical and professional areas.

The disparity in grade placement could also be a significant factor in explaining the differences that occur. The nondelinquents used in the study surpass the delinquents by approximately three full school semesters. The delinquent with his usual school retardation was probably not exposed to the mechanical and scientific courses available to the students on the higher secondary school levels, where interests could be stimulated. On the other hand, if mechanical and scientific preferences were possessed by both groups prior to high school attendance, being exposed to three additional semesters of school where the more advanced scientific and mechanical sub-

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89 Darley, Clinical Aspects of the Strong, 68.

90 Corsini, "Vocational Interests of Juvenile Delinquents," Journal of Correctional Education, III, 11-16.

jects are taught, could intensify or strengthen these interests and could account for the discrepancy that exists between the two groups.

Mechanical and scientific occupations often require a high degree of concentration and exactness in thinking. These characteristics might be found more frequently in the nondelinquent than in the delinquent, who is usually too much concerned with his own problems to allow for vocational interests demanding the qualities mentioned above.

The greater preference for outdoor activities by nondelinquents could be easily explained if they came from rural communities, but both groups are urban. However, the qualities of endurance, and perseverance that are necessary for outdoor work are probably not found so frequently in delinquent youths. Also, limited experience in positive outdoor functions, as participation in Boy Scout activities, frequent outings, camping trips or other wholesome outdoor recreations, could be an important factor. These activities are all desired for the stimulation of outdoor interests. They are in contrast with the clustering of delinquents and delinquent activities in the congested urban areas.

If one accepts the hypothesis that delinquents are more emotionally immature than nondelinquents and posseas more personality disturbances which demand much of their attention and

energy, the lower vocational interest patterns would be expected. Further, the dynamics of the delinquent are opposed to good personality integration and to the proper utilization of his abilities and energies, which are necessary for the development of desirable vocational interest patterns.

It is also possible that nondelinquents more often select a specific occupational goal and are already striving toward it. Such future life goals are frequently absent in the delinquent.

Although the grouped data reflects no significant differences in the other single vocational areas, the mean percentile rank for the nondelinquent group on the computational scale is 9.46 points higher than the mean for the delinquents. Klugman[91] found that persons scoring high in this area were much better adjusted than those whose scores were lower.

The delinquent group secured higher mean scores on the "cultural triad," composed of the artistic, musical and literary scales. Klugman[92] and Feather[93] both found this same difference to exist in studies of adjusted versus maladjusted individuals.

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91 Klugman, "Spread of Vocational Interests and General Adjustment Status," Journal of Applied Psychology, XXXIV, 1950, 111.

92 ibid. (i.e., 114)

93 Feather, "The Relationship of Personality Maladjustments of 503 University of Michigan Students to Their Occupational Interests," Journal of Social Psychology, XXXII, 1950, 78.

There are two tentative explanations as to why delinquents at the Illinois State Training School secured higher scores on these three scales. First, in general, the delinquents interned at the Training School are probably more poorly adjusted than the nondelinquent students who composed the control group Secondly, artistic, musical and literary interests are often reflected by individuals possessing a strong feminine component. Lack of masculine identification and/or inability to accept the responsibilities and functions concomitant with assuming the male role, is frequently discovered as being a basic or a contributing factor for the ward's sociopathic activities and confinement.

Using only the significantly high scores, (percentile rank of 75 or above) the number of high scores appearing on each record was checked. The nondelinquent group had a total of 134 on all scales. This results in a mean of 2.68 per record, with a SD of 1.13, compared to 100 significantly high scores for the delinquent group, a mean of 2.00 per record and a standard deviation of .88. A X^2 of 2.47 resulted and was significant only beyond the .10 level of confidence.

However, in the nondelinquent group, thirty-one individuals or 62 per cent had three or more significantly high scores on the KPR as compared to fifteen or thirty per cent of the delinquents. When chi-square is employed, a X^2 of 4.88 is

obtained, indicating a significant difference at the .05 level of confidence. These results indicate that the delinquents do possess weaker or less intensified interest patterns than do nondelinquents.

When the two significantly high scores on the individual records are combined, it is discovered that the nondelinquent is more likely to have mechanical-computational, mechanical-scientific, scientific-computational and mechanical-clerical combinations than is the delinquent. The mechanical-computational combination yielded a X^2 of 9.78. The mechanical-scientific and scientific-computational combinations produced chi-squares of 7.65 and 6.94 respectively. All three were significant beyond the .01 level of confidence. A chi-square of 4.28 was secured from the mechanical-clerical combination and was significant beyond the .05 level of confidence. Because the delinquent scores were generally depressed, there are no combinations of high scores which reveal significant differences in their favor.

Regarding the combinations of significantly low scores (percentile rank of 25 or below) only one significant difference was obtained. Here the delinquent is more likely to secure a combination of low significant scores on the outdoor-mechanical scales than is the nondelinquent. This is significant at the .05 level of confidence.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this investigation was to compare the vocational interest patterns of a group of delinquent and non-delinquent boys and to determine whether any significant differences were found to exist.

A synthesis of the literature on the development of vocational interests and a comparison of delinquent and nondelinquent preferences in the vocational field reveals much disagreement amongst educational, sociological and psychological investigators. Many adhere in various degrees to the theory that vocational interests reflect the sum total of deeply ingrained personality factors and personal experiences. Others maintain that vocational interests are specialized and do not pervade all phases of the individuals life and are determined by more contemporary needs and presses.

Recent authors do not accept the older theories of delinquency. They also refuse to accept those theories regarding the development of vocational interests that were adhered to in the past. It is now generally accepted that neither the development of interests nor the manifestations of delinquent behavior

is a cataclysmic or an abrupt transformation, but a gradual evolution affected by much of our environmental stimuli.

It is also evident that innumerable hypotheses have been made regarding the existence of similarities and differences in the vocational interests of those displaying delinquent and nondelinquent behavior patterns. A few definite conclusions are recorded but the purpose of much of this material is to stimulate other studies of vocational interests and vocational guidance. Investigators are gradually becoming aware of the increasing importance of both.

It must be concluded that both delinquents and nondelinquents may possess unpatterned, depressed, or clearly delineated areas of vocational interest that may be evanescent or permanent in their vocational selections.

In a final analysis of the literature, we find that the following important innate and external factors are crucial for differentiating the vocational interests of the two groups: physical traits; mental endowment; native and acquired abilities; level of aspiration; socio-economic status; personality factors of self, parents and associates; family, school and social adjustment; occupations of parents and friends with whom one associates, and contacts with activities in which interests can be developed.

In this study, two groups composed of fifty delinquent

and fifty nondelinquent white boys, between the ages of fifteen and seventeen inclusive, served as subjects. Age, reading ability, IQ, school grade, father's occupation, residential area and religion were the variables that were controlled for these two groups.

The delinquent subjects selected, were obtained from the Illinois State Training School for Boys at St. Charles, Illinois. A comparable group of nondelinquents was then selected from Chicago high schools. Both groups were given the Kuder Preference Record according to the instructions given in the Kuder Examiner's Manual.

From the numerous investigations that have been conducted with the Kuder Preference Record since its introduction some eighteen years ago, it can be concluded that its reliability and validity have been adequately established. Numerous investigators state that favorable research findings guarantee its validity. A reliability coefficient of .91 is claimed for the Kuder Preference Record. The tool is used extensively by personnel in the fields of counseling and guidance. It is employed with adolescents and adults of both sexes, and it has been found reasonably reliable for age groups as low as the eighth grade. This gives some indication of its general acceptance.

The results of this study for this particular sample

warrant the following conclusions:

1. Nondelinquent boys possess stronger vocational preferences in the scientific, mechanical and outdoor areas as classified on the Kuder Preference Record. These differences were found to be significant beyond the .01 per cent level of confidence for the scientific and mechanical interests. The difference on the outdoor scale was found to be significant beyond the .05 per cent level.

2. Delinquent boys secure higher mean scores on the artistic, musical and literary scales than do nondelinquent boys. This has been found to be related to personality maladjustment in previous studies. None of the differences here, however, were significant beyond the .25 per cent level of confidence.

3. Kuder Preference Record profiles for delinquents are more likely to be weaker or depressed than are the interest patterns of nondelinquents. That is, the nondelinquent group as a whole had records containing two or three significantly high scores (above percentile rank of 75) more frequently than did the delinquent group. This difference was significant beyond the .05 per cent level of confidence.

4. When the two significantly high scores on the Kuder Preference Record are combined, the nondelinquents are more likely to obtain mechanical-scientific, mechanical-computational and scientific-computational and mechanical-clerical interest pat-

terns than are the delinquents. The first three combinations are significant at the .01 per cent level of confidence. The latter is significant at the .05 per cent level.

5. When the two significantly low scores on the Kuder Preference Record are combined, the delinquent is more likely to possess outdoor-mechanical interest patterns than is the non-delinquent. This difference is significant at the .05 per cent level of confidence.

It must be remembered that the Kuder Preference Record is designed to measure preferences for broad areas of interest. These areas are too inclusive to differentiate more specific occupations. Wider variations may still exist between the two groups employed but because of the extensive areas covered, more specific occupational preferences would not be reflected.

It is suggested that further studies be made using similar groups, but a more specific interest scale would be desirable.

APPENDIX

RAW SCORES AND PERCENTILE RANK OF THE SCORES AS OBTAINED FROM THE KUDER PREFERENCE RECORDS OF 50 DELINQUENT BOYS

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
1	38	59	75	35	22	29	75	38	42	38	45	24	45	22	75	6	13	42	69	56	83
2	38	36	24	39	32	29	75	33	25	41	57	26	53	17	51	22	85	34	37	51	71
3	42	27	10	21	4	18	19	27	12	45	71	30	69	13	28	10	34	38	55	69	97
4	39	30	14	35	23	34	89	28	15	46	74	20	27	27	88	13	52	36	47	49	65
5	38	65	87	46	51	28	71	41	50	38	45	35	83	16	47	14	57	25	12	42	41
6	38	59	76	29	12	18	2	37	38	29	14	33	78	15	41	12	47	44	76	54	80
7	40	46	47	39	32	26	62	20	4	44	68	43	94	20	67	12	47	29	21	44	47
8	38	38	28	42	39	26	50	24	8	42	61	26	54	25	83	18	74	31	26	58	87
9	40	39	30	48	57	13	75	19	50	37	68	47	45	11	51	10	84	47	59	36	21
10	40	26	9	38	30	27	65	29	16	37	41	48	98	17	52	12	46	51	91	44	47
11	42	15	1	43	42	23	44	48	71	40	53	24	44	12	22	25	91	53	93	47	57
12	43	58	74	59	90	17	16	51	78	29	14	34	81	21	72	6	13	40	63	29	6
13	42	23	6	53	72	28	70	40	47	45	72	18	20	26	86	15	62	30	24	53	77
14	40	28	11	24	6	28	71	18	2	63	96	27	57	30	93	18	74	34	37	58	87
15	41	53	63	48	57	24	50	25	9	36	37	24	44	17	52	18	73	33	34	44	47
16	40	19	3	45	49	16	12	34	27	65	98	28	62	7	6	19	77	42	69	59	88
17	44	18	3	42	39	21	32	16	56	29	14	24	44	29	92	16	66	52	92	49	65
18	41	28	12	39	32	23	44	30	18	42	61	51	99	31	95	3	3	20	4	56	83
19	38	27	10	27	9	28	71	29	16	65	97	10	3	17	52	5	9	45	78	71	97
20	44	33	18	52	69	25	55	45	63	32	22	26	52	6	4	12	46	34	37	50	68
21	42	46	47	46	51	25	55	31	20	34	29	14	9	5	3	17	70	54	94	48	62
22	43	69	93	52	69	16	12	40	47	38	45	27	57	8	8	7	18	44	76	38	26
23	41	31	15	33	18	23	44	39	44	39	48	27	57	20	66	19	77	43	73	50	68
24	42	59	76	54	75	29	33	40	47	36	36	25	49	21	72	14	57	42	59	37	23
25	43	36	24	37	27	12	4	42	53	54	89	46	96	19	62	11	41	37	50	42	41

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
26	43	52	61	34	20	15	9	39	44	31	19	46	96	34	98	11	41	38	55	29	5
27	39	48	51	49	60	15	9	34	28	36	37	15	11	12	22	13	52	50	90	46	55
28	39	38	28	27	9	22	38	24	9	66	97	36	84	15	41	12	46	14	1	66	95
29	42	53	63	50	63	22	38	40	46	43	63	51	72	20	66	21	57	21	6	54	79
30	43	66	88	53	72	13	5	33	25	34	29	36	84	14	34	16	66	35	42	38	26
31	41	66	88	54	75	20	28	44	53	19	2	30	69	12	22	18	74	47	83	25	2
32	38	44	42	34	20	28	71	47	68	44	68	26	53	27	75	9	28	43	73	40	33
33	41	54	65	36	25	21	33	24	8	40	52	15	11	19	62	28	96	41	66	51	71
34	38	52	61	43	42	16	12	52	80	40	52	20	27	8	8	24	89	24	11	42	41
35	41	34	20	60	90	35	90	39	44	29	14	15	11	13	28	8	24	40	63	65	94
36	40	62	82	59	89	15	9	53	82	36	37	25	49	9	11	18	74	38	54	16	0
37	40	53	63	45	49	27	65	23	6	37	41	36	87	20	66	12	46	36	47	40	33
38	43	33	18	34	20	28	71	28	14	45	71	22	35	14	34	11	40	44	76	79	99
39	43	64	85	48	56	13	5	18	3	42	61	31	72	19	62	13	52	56	96	37	23
40	42	38	28	45	49	24	50	44	59	43	64	26	52	14	34	11	40	43	73	49	65
41	40	46	47	25	6	26	61	37	37	48	79	21	30	22	75	12	46	35	42	71	97
42	43	51	59	46	51	13	5	37	37	36	36	45	95	17	51	7	18	34	37	44	47
43	41	51	59	52	69	18	19	35	32	45	71	37	86	27	88	8	24	22	7	36	20
44	39	45	45	28	11	18	19	34	27	48	79	25	48	23	78	28	96	29	21	42	41
45	40	16	2	39	31	36	92	21	5	55	91	22	35	25	83	18	73	37	50	59	88
46	38	39	30	48	57	29	5	41	3	44	41	24	97	17	18	22	34	39	83	36	20
47	41	59	74	56	82	26	61	38	35	27	10	50	99	15	41	11	40	34	37	34	15
48	41	27	10	35	22	24	50	29	16	46	74	26	55	32	96	22	85	32	29	28	4
49	42	36	24	16	2	27	65	36	35	37	41	18	20	14	35	27	94	46	80	80	99
50	40	21	4	23	5	15	9	25	9	67	98	24	62	40	99	20	80	25	12	51	71

APPENDIX

RAW SCORES AND PERCENTILE RANK OF THE SCORES AS OBTAINED FROM THE KUDER PREFERENCE RECORDS OF 50 NONDELINQUENT BOYS

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
1	40	61	79	47	54	18	19	42	53	37	40	13	7	17	51	20	80	42	69	46	56
2	42	35	22	51	66	41	97	40	47	39	49	25	49	23	78	15	62	18	3	57	85
3	38	39	50	62	95	29	75	57	89	43	64	13	1	21	72	1	1	32	29	54	79
4	40	51	59	55	78	31	82	45	63	21	3	43	94	24	81	4	6	36	50	30	8
5	40	47	50	43	42	22	38	53	82	37	41	20	27	19	62	26	93	28	18	44	47
6	42	47	50	53	72	20	28	33	25	52	86	36	85	14	34	21	82	39	59	52	11
7	44	67	90	60	92	16	12	55	86	41	57	42	93	20	66	5	9	21	6	24	2
8	40	53	63	62	95	25	56	28	14	37	40	34	81	12	22	20	80	32	29	35	17
9	39	52	61	48	57	12	4	22	6	54	89	40	91	25	83	8	24	22	7	45	50
10	38	74	97	52	69	19	24	63	97	35	34	14	9	14	35	6	13	47	81	36	20
11	41	43	40	57	84	25	65	54	84	34	29	26	52	8	8	6	14	40	63	47	58
12	43	68	92	55	78	29	75	50	75	26	8	27	56	13	28	5	9	38	54	39	29
13	39	53	63	39	32	36	61	44	59	41	56	23	41	6	4	10	33	32	29	73	98
14	39	37	26	35	23	30	78	42	53	46	74	5	1	30	93	19	77	42	69	62	92
15	41	49	54	63	97	21	32	35	32	40	52	27	57	9	11	12	46	29	21	64	93
16	40	57	72	62	95	24	50	53	83	29	14	29	65	12	29	12	46	15	1	56	82
17	39	67	90	58	87	17	16	42	53	44	67	13	7	14	34	4	6	38	55	40	32
18	44	29	12	40	34	42	98	44	59	49	80	26	52	23	78	7	18	29	21	58	87
19	41	25	8	50	64	29	75	28	14	45	70	42	93	8	8	7	18	39	59	57	85
20	41	22	5	42	39	25	55	29	12	58	42	40	90	18	55	12	45	16	2	61	91
21	44	33	18	28	11	19	24	33	25	44	68	23	42	26	86	22	84	39	59	46	55
22	38	38	28	28	11	31	82	37	37	54	89	22	35	18	56	9	28	46	81	41	36
23	40	48	51	39	32	21	33	46	65	31	19	17	15	25	83	14	57	33	34	55	81
24	41	36	24	54	75	34	89	39	44	46	74	21	30	15	41	7	18	28	18	64	94
25	41	48	52	23	5	18	19	23	6	40	52	41	92	38	99	17	70	48	85	46	55

V		0		1		2		3		4		5		6		7		8		9	
		RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
26	42	51	59	52	69	23	49	39	44	40	51	31	72	15	41	6	13	37	50	41	36
27	40	66	88	63	97	17	16	47	68	35	33	35	83	21	72	8	24	30	24	33	12
28	42	45	45	46	50	26	61	61	94	24	6	17	15	27	88	6	13	30	24	59	88
29	40	42	37	50	64	24	50	31	20	37	40	25	49	19	62	12	46	34	37	34	15
30	44	31	15	33	18	26	61	44	60	39	49	15	11	12	22	6	13	56	96	63	93
31	40	67	90	53	72	33	87	55	86	24	6	17	16	8	8	12	46	39	59	41	36
32	41	21	4	38	29	29	75	23	6	42	62	30	69	20	66	22	85	42	69	54	79
33	43	48	51	65	99	16	12	42	53	27	10	37	86	14	35	6	13	39	59	42	41
34	44	25	8	13	1	30	78	25	9	55	90	19	22	25	83	25	91	34	37	78	99
35	39	43	39	50	64	28	70	61	94	24	6	19	23	27	89	6	13	34	37	57	85
36	40	44	42	61	93	17	16	29	16	33	25	36	85	19	55	19	77	35	42	29	6
37	39	41	34	30	13	22	38	30	17	55	90	28	62	28	91	14	57	31	26	62	92
38	44	49	54	60	92	19	24	25	9	35	33	39	89	9	11	5	9	42	69	43	44
39	38	42	36	47	54	27	65	23	7	37	40	24	44	10	15	27	94	43	73	47	57
40	43	57	72	49	60	31	82	39	44	32	22	21	31	10	15	15	60	41	66	41	36
41	42	54	65	40	34	13	5	30	17	30	16	43	94	22	75	27	94	17	2	48	62
42	41	68	91	55	78	22	38	44	59	23	5	21	31	21	71	14	57	53	93	35	17
43	44	58	74	59	89	17	16	46	65	15	1	35	82	9	11	11	40	36	47	33	11
44	39	75	98	43	42	12	4	34	27	35	34	27	57	6	4	8	24	58	97	37	23
45	43	58	74	44	45	41	97	55	86	35	34	36	52	9	11	6	13	35	42	56	83
46	39	56	70	56	82	29	70	59	92	58	92	29	69	24	81	9	29	45	78	48	62
47	40	64	85	57	84	37	93	45	63	32	22	20	27	20	66	18	74	20	4	39	29
48	41	56	70	44	45	20	28	35	32	37	41	44	94	15	41	13	51	34	37	42	41
49	38	53	63	30	13	30	78	56	87	33	25	22	35	17	51	8	24	48	85	55	81
50	38	31	15	37	26	38	94	28	14	44	68	29	65	14	34	30	99	37	50	51	71

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APPENDIX

RAW SCORES AND PERCENTILE RANK OF THE SCORES AS OBTAINED FROM THE KUDER PREFERENCE RECORDS OF 50 DELINQUENT BOYS

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
1	38	59	75	35	22	29	75	38	42	38	45	24	45	22	75	6	13	42	69	56	83
2	38	36	24	39	32	29	75	33	25	41	57	26	53	17	51	22	85	34	37	51	71
3	42	27	10	21	4	18	19	27	12	45	71	30	69	13	28	10	34	38	55	69	97
4	39	30	14	35	23	34	89	28	15	46	74	20	27	27	88	13	52	36	47	49	65
5	38	65	87	46	51	28	71	41	50	38	45	35	83	16	47	14	57	25	12	42	41
6	38	59	76	29	12	18	2	37	38	29	14	33	78	15	41	12	47	44	76	54	80
7	40	46	47	39	32	26	62	20	4	44	68	43	94	20	67	12	47	29	21	44	47
8	38	38	28	42	39	26	50	24	8	42	61	26	54	25	83	18	74	31	26	58	87
9	40	39	30	48	57	13	75	19	50	37	68	47	45	11	51	10	84	47	59	36	21
10	40	26	9	38	30	27	65	29	16	37	41	48	98	17	52	12	46	51	91	44	47
11	42	15	1	43	42	23	44	48	71	40	53	24	44	12	22	25	91	53	93	47	57
12	43	58	74	59	90	17	16	51	78	29	14	34	81	21	72	6	13	40	63	29	6
13	42	23	6	53	72	28	70	40	47	45	72	18	20	26	86	15	62	30	24	53	77
14	40	28	11	24	6	28	71	18	2	63	96	27	57	30	93	18	74	34	37	58	87
15	41	53	63	48	57	24	50	25	9	36	37	24	44	17	52	18	73	33	34	44	47
16	40	19	3	45	49	16	12	34	27	65	98	28	62	7	6	19	77	42	69	59	88
17	44	18	3	42	39	21	32	16	56	29	14	24	44	29	92	16	66	52	92	49	65
18	41	28	12	39	32	23	44	30	18	42	61	51	99	31	95	3	3	20	4	56	83
19	38	27	10	27	9	28	71	29	16	65	97	10	3	17	52	5	9	45	78	71	97
20	44	33	18	52	69	25	55	45	63	32	22	26	52	6	4	12	46	34	37	50	68
21	42	46	47	46	51	25	55	31	20	34	29	14	9	5	3	17	70	54	94	48	62
22	43	69	93	52	69	16	12	40	47	38	45	27	57	8	8	7	18	44	76	38	26
23	41	31	15	33	18	23	44	39	44	39	48	27	57	20	66	19	77	43	73	50	68
24	42	59	76	54	75	29	33	40	47	36	36	25	49	21	72	14	57	42	59	37	23
25	43	36	24	37	27	12	4	42	53	54	89	46	96	19	62	11	41	37	50	42	41

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
26	43	52	61	34	20	15	9	39	44	31	19	46	96	34	98	11	41	38	55	29	5
27	39	48	51	49	60	15	9	34	28	36	37	15	11	12	22	13	52	50	90	46	55
28	39	38	28	27	9	22	38	24	9	66	97	36	84	15	41	12	46	14	1	66	95
29	42	53	63	50	63	22	38	40	46	43	63	51	72	20	66	21	57	21	6	54	79
30	43	66	88	53	72	13	5	33	25	34	29	36	84	14	34	16	66	35	42	38	26
31	41	66	88	54	75	20	28	44	53	19	2	30	69	12	22	18	74	47	83	25	2
32	38	44	42	34	20	28	71	47	68	44	68	26	53	27	75	9	28	43	73	40	33
33	41	54	65	36	25	21	33	24	8	40	52	15	11	19	62	28	96	41	66	51	71
34	38	52	61	43	42	16	12	52	80	40	52	20	27	8	8	24	89	24	11	42	41
35	41	34	20	60	90	35	90	39	44	29	14	15	11	13	28	8	24	40	63	65	94
36	40	62	82	59	89	15	9	53	82	36	37	25	49	9	11	18	74	38	54	16	0
37	40	53	63	45	49	27	65	23	6	37	41	36	87	20	66	12	46	36	47	40	33
38	43	33	18	34	20	28	71	28	14	45	71	22	35	14	34	11	40	44	76	79	99
39	43	64	85	48	56	13	5	18	3	42	61	31	72	19	62	13	52	56	96	37	23
40	42	38	28	45	49	24	50	44	59	43	64	26	52	14	34	11	40	43	73	49	65
41	40	46	47	25	6	26	61	37	37	48	79	21	30	22	75	12	46	35	42	71	97
42	43	51	59	46	51	13	5	37	37	36	36	45	95	17	51	7	18	34	37	44	47
43	41	51	59	52	69	18	19	35	32	45	71	37	86	27	88	8	24	22	7	36	20
44	39	45	45	28	11	18	19	34	27	48	79	25	48	23	78	28	96	29	21	42	41
45	40	16	2	39	31	36	92	21	5	55	91	22	35	25	83	18	73	37	50	59	88
46	38	39	30	48	57	29	5	41	3	44	41	24	97	17	18	22	34	39	83	36	20
47	41	59	74	56	82	26	61	38	35	27	10	50	99	15	41	11	40	34	37	34	15
48	41	27	10	35	22	24	50	29	16	46	74	26	55	32	96	22	85	32	29	28	4
49	42	36	24	16	2	27	65	36	35	37	41	18	20	14	35	27	94	46	80	80	99
50	40	21	4	23	5	15	9	25	9	67	98	24	62	40	99	20	80	25	12	51	71

APPENDIX

RAW SCORES AND PERCENTILE RANK OF THE SCORES AS OBTAINED FROM THE KUDER PREFERENCE RECORDS OF 50 NONDELINQUENT BOYS

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
1	40	61	79	47	54	18	19	42	53	37	40	13	7	17	51	20	80	42	69	46	56
2	42	35	22	51	66	41	97	40	47	39	49	25	49	23	78	15	62	18	3	57	85
3	38	39	50	62	95	29	75	57	89	43	64	13	1	21	72	1	1	32	29	54	79
4	40	51	59	55	78	31	82	45	63	21	3	43	94	24	81	4	6	36	50	30	8
5	40	47	50	43	42	22	38	53	82	37	41	20	27	19	62	26	93	28	18	44	47
6	42	47	50	53	72	20	28	33	25	52	86	36	85	14	34	21	82	39	59	52	11
7	44	67	90	60	92	16	12	55	86	41	57	42	93	20	66	5	9	21	6	24	2
8	40	53	63	62	95	25	56	28	14	37	40	34	81	12	22	20	80	32	29	35	17
9	39	52	61	48	57	12	4	22	6	54	89	40	91	25	83	8	24	22	7	45	50
10	38	74	97	52	69	19	24	63	97	35	34	14	9	14	35	6	13	47	81	36	20
11	41	43	40	57	84	25	65	54	84	34	29	26	52	8	8	6	14	40	63	47	58
12	43	68	92	55	78	29	75	50	75	26	8	27	56	13	28	5	9	38	54	39	29
13	39	53	63	39	32	36	61	44	59	41	56	23	41	6	4	10	33	32	29	73	98
14	39	37	26	35	23	30	78	42	53	46	74	5	1	30	93	19	77	42	69	62	92
15	41	49	54	63	97	21	32	35	32	40	52	27	57	9	11	12	46	29	21	64	93
16	40	57	72	62	95	24	50	53	83	29	14	29	65	12	29	12	46	15	1	56	82
17	39	67	90	58	87	17	16	42	53	44	67	13	7	14	34	4	6	38	55	40	32
18	44	29	12	40	34	42	98	44	59	49	80	26	52	23	78	7	18	29	21	58	87
19	41	25	8	50	64	29	75	28	14	45	70	42	93	8	8	7	18	39	59	57	85
20	41	22	5	42	39	25	55	29	12	58	42	40	90	18	55	12	45	16	2	61	91
21	44	33	18	28	11	19	24	33	25	44	68	23	42	26	86	22	84	39	59	46	55
22	38	38	28	28	11	31	82	37	37	54	89	22	35	18	56	9	28	46	81	41	36
23	40	48	51	39	32	21	33	46	65	31	19	17	15	25	83	14	57	33	34	55	81
24	41	36	24	54	75	34	89	39	44	46	74	21	30	15	41	7	18	28	18	64	94
25	41	48	52	23	5	18	19	23	6	40	52	41	92	38	99	17	70	48	85	46	55

V	0		1		2		3		4		5		6		7		8		9	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
26	42	51	59	52	69	23	49	39	44	40	51	31	72	15	41	6	13	37	50	41	36
27	40	66	88	63	97	17	16	47	68	35	33	35	83	21	72	8	24	30	24	33	12
28	42	45	45	46	50	26	61	61	94	24	6	17	15	27	88	6	13	30	24	59	88
29	40	42	37	50	64	24	50	31	20	37	40	25	49	19	62	12	46	34	37	34	15
30	44	31	15	33	18	26	61	44	60	39	49	15	11	12	22	6	13	56	96	63	93
31	40	67	90	53	72	33	87	55	86	24	6	17	16	8	8	12	46	39	59	41	36
32	41	21	4	38	29	29	75	23	6	42	62	30	69	20	66	22	85	42	69	54	79
33	43	48	51	65	99	16	12	42	53	27	10	37	86	14	35	6	13	39	59	42	41
34	44	25	8	13	1	30	78	25	9	55	90	19	22	25	83	25	91	34	37	78	99
35	39	43	39	50	64	28	70	61	94	24	6	19	23	27	89	6	13	34	37	57	85
36	40	44	42	61	93	17	16	29	16	33	25	36	85	19	55	19	77	35	42	29	6
37	39	41	34	30	13	22	38	30	17	55	90	28	62	28	91	14	57	31	26	62	92
38	44	49	54	60	92	19	24	25	9	35	33	39	89	9	11	5	9	42	69	43	44
39	38	42	36	47	54	27	65	23	7	37	40	24	44	10	15	27	94	43	73	47	57
40	43	57	72	49	60	31	82	39	44	32	22	21	31	10	15	15	60	41	66	41	36
41	42	54	65	40	34	13	5	30	17	30	16	43	94	22	75	27	94	17	2	48	62
42	41	68	91	55	78	22	38	44	59	23	5	21	31	21	71	14	57	53	93	35	17
43	44	58	74	59	89	17	16	46	65	15	1	35	82	9	11	11	40	36	47	33	11
44	39	75	98	43	42	12	4	34	27	35	34	27	57	6	4	8	24	58	97	37	23
45	43	58	74	44	45	41	97	55	86	35	34	36	52	9	11	6	13	35	42	56	83
46	39	56	70	56	82	29	70	59	92	58	92	29	69	24	81	9	29	45	78	48	62
47	40	64	85	57	84	37	93	45	63	32	22	20	27	20	66	18	74	20	4	39	29
48	41	56	70	44	45	20	28	35	32	37	41	44	94	15	41	13	51	34	37	42	41
49	38	53	63	30	13	30	78	56	87	33	25	22	35	17	51	8	24	48	85	55	81
50	38	31	15	37	26	38	94	28	14	44	68	29	65	14	34	30	99	37	50	51	71

APPROVAL SHEET

The thesis submitted by Daniel Francis Novak has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

January 26, 1953
Date

Frank J. Kobler
Signature of Adviser